



Ø BEAT

COLORADO SPRINGS,
COLORADO

JUNE 1984

FROM THE EDITOR'S DESK

Ye olde editor needs the help of ye olde members! Remember back a couple of meetings ago when ye olde editor cried, begged and pleaded for some input from the membership? It was there upon threatened that summer reruns would, or could, appear amongst the noble words printed herein. Well, that time is nearly upon us. I know that some one out there is a literary giant and only needs to be revealed for all the world to discover. I will allow, nay, beg that person to come forward and lay his (her) words upon the barren waters of newsletter literature. Namely, within the pages of the Zero Beat! Out in the uncharted lands of hamland is an unknown writer just waiting to be discovered by a world thirsty for the knowledge that can be imparted to us by that unheralded person. Is it you? Give it a shot and find out. The worst that may happen is that the membership might return boos and huzzas. But, it might just happen that the members would scream "Hookas" instead. Take the plunge and get me some help. Oh, the shame of it all if it comes to be summer reruns in the venerable old Zero Beat. Lets hear it for the new (old, but unrecognized?) writer. Maybe in next months pages, huh?

For those of you who did not make the convention and see the special (?) newsletter issue, I am reprinting a list of nets that are of local interest.

146.34/94	Rocky Mountain RRL (CO) Sunday eves at 8PM local
146.37/97	District 14 ARES Net (CO) Wednesday eves 7PM local
3.945 MHz	Colorado Weather Net (CWXN) Daily 7:30 AM local
3.715 MHz	Colo - Wyo Net (CWN) Daily 8:30 PM local
3.989 MHz	Columbine Net Mon - SAT 8PM local
7.240 MHz	High Noon Net Daily 1PM local

This information was taken from the ARRL Net Directory and should be current. I have been on a couple of the nets and they would welcome any and all newcomers. They appreciate the help! Check in and find out how much fun nets can be while you do someone else some good.

P.P.R.A.A. DIRECTORS

PRESIDENT	* Al Vrooman NOCMW 1341 Diana Ln. 80909	473-1660
V. PRESIDENT	* Mike Stansberry KOTER 2630 E. Uintah 80909	636-1290
SECRETARY	* Mark Richardson NOEPF 24 N. Union 80909	473-1799
TREASURER	Les Borst KCONC 2542 E. Bijou 80909	634-3995
Board Member	Bill Martin KQOH 4380 Sedate Ln. 80917	596-7519
Board Member	* Frank Drake KL7IPV 4964 Harvest Rd. 80917	597-2406
Board Member	Jake Jacobs NOCYR 104 Old Broadmoor Rd. 80906	634-2223
Board Member	Doc Cornell WOMCT 721 Lansing Dr. 80909	596-4216

ZERO BEAT is published monthly in the interest of the the members of the Pikes Peak Radio Amateur Association Inc., Colorado Springs, Colorado. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles is the 21st of the month. Classifieds accepted anytime.

The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at Giuseppe's Depot Restaurant at 10 S. Sierra Madre at 7:30 p.m. All amateurs and interested parties are invited to attend.

Editor: Frank Drake KL7IPV, 4964 Harvest Rd. Colorado Springs, CO 80917 597-2406

GENERAL MEETING MINUTES

GENERAL MEETING MINUTES

GENERAL MEETING MINUTES

The regular meeting of the Pikes Peak Radio Amateur Assoc. was called to order May 9th, 1984, at Guiseppe's. 39 members, and guests, were present. After introductions; Les, KCONC, reported income to the treasury of \$1556.63. Expenses were \$360.21. That left a balance of \$3206.65 in the treasury. A motion was made to approve the minutes as printed in the Zero Beat. Passed.

The Swapfest standing committee would like ideas, now, for next years fest. Contact Frank, KL7IPV.

The Education committee reported the classes were going well. However; problem arose with the video tapes. Our tapes are VHS while District 11 has Betamax equipment. They are not compatible. KQDJ volunteered a machine to make copies in the Beta format.

It was moved to pass out surplus QSL cards at the Denver Convention. Passed. A motion to publish a special edition of Zero Beat for the convention passed.

A Publicity chairman is still needed. This is an important post necessary to getting our name known in town. Any takers??

Under new business; Jake, NOCYR, presented the idea of the club purchasing a trailer for special use. Discussion followed. A motion to purchase a 15 foot trailer for \$800 was made. Passed 35 for, 4 against. A motion to set a committee to make sure the purchase and refurbishing progresses orderly and constructively was passed. The committee members are: Mike, Frank, Bud, Les and Oak. A motion to allocate up to \$200 to get the trailer in shape passed.

Operators are needed for the field day. The location will be at Rampart Range area used two years ago. There will be a Saturday eve dinner also. There will be a Sunday morning breakfast also. The dates are June 23rd & 24th.

Tom, AD00, presented a motion that the video tapes be made available to club members, with an appropriate release form promising not to copy the tapes, and also promising to pay for any breakage. Motion passed.

Thanks again to Gerry Johnson, N8CWZ, for an excellent talk about balanced modulators. It would be to difficult to discuss in this space so, in Gerry's words, do what this writer (NOEPF) must do, "read the book!". ARRL License Manual - Chapter #5.

Respectfully submitted,
Mark, NOEPF

FOR SALE FOR SALE FOR SALE FOR SALE

OR SALE FOR SALE FOR SALE FOR SALE

RADIOS: Ten-Tec OMNI-D w/Pwr supply
Includes built NB, 10 & 24 Meg. bands,
factory installed options for pwr sply
protection. Excellent shape. \$600 firm

Also a SBE 33 4 band, SSB only,
transceiver. This is one of the first
hybrid radios. Needs alignment to run
right. \$100, but willicker on this.

Also a Realistic 5 band shortwave
receiver. In very good condition. \$75

Also a complete N gauge train set.
It includes track, engines, cars, and
two power packs. It has buildings,
some of which are assembled. \$400

All the radios include manuals.

Contact Frank, KL7IPV or call at
home at 597-2406



**COLORADO SPRINGS
WALKER ELECTRONICS**
2838 NORTH PROSPECT ST.
COLORADO SPRINGS, COLORADO 80907
PHONE (303) 636-1561

WHOLESALE DISTRIBUTORS
EXPERIMENTERS ITEMS
HEADPHONES—SPEAKERS
ANTENNA INSTALL. MATERIALS

CHEMICALS—TOOLS
WIRE AND CABLE
SERVICE AIDS

LEADER
Instruments Corp

Regency

MICROPHONES

As reported in the Anchorage Radio Club newsletter for May, the first VEC test conducted in the country was held in Anchorage in April. Approximately 40 people took tests with the FCC giving the Extra and Advanced class tests, and the Anchorage VEC giving the Tech and General. The FCC and Anchorage club found out how much paperwork was involved when the tests are given like that. LOTS!! Should be easier next time and we all might get a break as the FCC turns the reins over to us knowing what is involved when clubs do the testing.

This month you will find a printout of a computer program for generating QSL cards. If any of you have a favorite computer program that you think may be of interest to others, give me a printout and we'll put it in. Many of us have computers but, it is a secret to others. Next month I'll run a questionnaire to be filled out. I'll give the results in the next issue and we'll all know what kind of interest there is in the club for computers. For those of you who would like to get into local bulletin boards, but don't know the local numbers, I'll list them next month also. There are about ten (10) of them. They serve everything from Atari's to TI's. Maybe I'll start a column that will be called "The Computer Corner". Original, huh? Got better ideas? Tell me and it'll show up here. 'til next month, happy 'puting.

MEETING MEETING MEETING MEETING MEETING MEETING MEETING MEETING MEETING

The next regular scheduled meeting of the Pikes Peak Radio Amateur Assoc. will be at Giuseppe's Depot on #10 S. Sierra Madre at 7:30PM on Wed., 6-13-84. Come early, have dinner (good food!) and then attend the meeting. The scheduled program is Greg Utterback, NBØU, conducting a talk about VHF. Come and enjoy, Greg knows his stuff! Oughtta be very interesting. See you there....

The meeting of the Pikes Peak Radio Amateur Assoc. board of directors was called to order at 7:35PM, May 14th, 1984, at the home of Doc, W0MCT. Those board members present were: Doc, Les, Al, Frank, Bill, and Mark.

An open discussion centered on the purchase of the trailer. Insurance need will be specifically looked into.

Al indicated that the people involved with the olympic torch run need local amateur radio HF and VHF help in the fourth week in June. Contact Al for more info.

Greg Utterback, NB0U, has graciously offered to conduct a VHF talk at the June general membership meeting.

Some discussion centered on the meeting procedures and format with an eye to possible improvements. Also discussed was the possibility of lowering club dues. The matter must be studied further before a decision is reached.

The board reviewed the current list of equipment and indicated several of the pieces which could possibly be auctioned off to members.

There being no further business before the board, the meeting was adjourned at 10:35PM. The next meeting will be at Les's home on June 18th.

Respectfully submitted,
Mark, N0EPF

Now is the time for all good men... Well, not really all, just one is all I need. I am going to skip town the first two weeks of July. In that time one good man (woman), any man or woman, will be needed to put this thing out. I know there are many of you just dying to do this, so now is the chance. See me at the meeting and I'll give you all the help I can. It'll take about 30 seconds. It isn't real work to put the Zero Beat out, but takes a little time. Give it a shot, you might even like it.

For those of you who missed the convention, the people representing our club would have made you proud. Oak, Rosie, and others whose names I cannot recall, were busy talking up our club. They put in lots of time and let a lot of members of other clubs know that the Pikes Peak radio Amateur Assoc. is very much alive and well. The convention was well attended and so was the hospitality room. We couldn't have done better if we had done it ourselves. Thanks to all on behalf of the membership!!

GOODBYE GOODBYE GOODBYE

Jim Owens, KR7J, has moved on to bigger and better things in Newport, R.I. in a company transfer. Jim will be on the air soon as he settles. We'll be hearing him soon again! Good luck on the new job, Jim.



VIDEO COMMUNICATIONS
Home computer products


Star
SUPREMACY

C. Itoh
 Prowriter

OKIDATA

EPSON
 PRINTERS

SAVE
 MODEMS


SMITH CORONA
 COMPUTERS

BIG SAVINGS

MONITORS
 call for prices

DISKETTES

**I HAVE SOMETHING
TO SAY!**

Bob Haggart
 (303) 392-9743

158 Widefield Blvd.
 Colorado Springs, CO 80811
 (Widefield)

NOTICE NOTICE NOTICE NOTICE

There will be numerous books that many of you will find usefull. They are radio & antenna books that are donated to the club for distribution to club members. Bob, N0CTV, has also given three two-meter rigs to the club to dispose of as the club wishes. They will be at the next meeting. Thanks for donation, Bob!


```

10 POKE-17423,0
20 PRINT CHR$(26)
30 CLEAR 30000
40 X$="!"
50 DIM A$(99)
60 INPUT "CALLSIGN?";A$:IF A$ = "NONE" THEN GOTO 190
70 INPUT "GMT";B$
80 G$=" "
90 INPUT "DATE";C$
100 INPUT "BAND";D$
110 INPUT "RS/T";E$
120 INPUT "MODE-CW/SSB";F$
130 A$(1)=A$+X$+B$+X$+C$+X$+D$+X$+E$+X$+F$+X$
140 PRINT CHR$(26)
150 PRINT FRE(Z$)
160 I=I+1
170 PRINT "THE NUMBER OF QSL'S TO PRINT NOW IS ";I
180 GOTO 60
190 I=0
200 INPUT "THE NUMBER OF QSL'S TO PRINT?";P
210 IF I=P THEN GOTO 550
220 LPRINT TAB(20)"AMATEUR RADIO STATION"
230 LPRINT TAB(23)" K L 7 I P V "
240 LPRINT TAB(23)" K L 7 I P V "
250 LPRINT TAB(23)" K L 7 I P V "
260 LPRINT " "
270 G$=" ":K=1
280 FOR J=1 TO LEN(A$(I))
290 H$=MID$(A$(I),J,1)
300 IF H$ X$ THEN G$=G$+H$:GOTO 390
310 ON K GOTO 320,330,340,350,360,370
320 A$=G$:GOTO 380
330 B$=G$: GOTO 380
340 C$=G$: GOTO 380
350 D$=G$:GOTO 380
360 E$=G$:GOTO 380
370 F$=G$
380 G$=" ":K=K+1
390 NEXT J
400 LPRINT CHR$(30)TAB(10)"Confirming the QSO with: "
410 LPRINT STRING$(57,CHR$(42))
420 LPRINT CHR$(42)TAB(5)"Station"TAB(15)CHR$(42)" GMT"TAB(25)CHR$(42)
" Date"TAB(35)CHR$(42)" Band"TAB(42)CHR$(42)" RS/T"TAB(49)CHR$(42)" Mode"
TAB(56)CHR$(42)
430 LPRINT CHR$(42)TAB(5)A$TAB(15)CHR$(42)B$TAB(25)CHR$(42)C$TAB(35)CHR$(42)
D$TAB(42)CHR$(42)E$TAB(49)CHR$(42)F$TAB(56)CHR$(42)
440 LPRINT STRING$(57,CHR$(42))
450 LPRINT CHR$(29)TAB(15)"Operator & QTH: Frank Drake, KL7IPV"
460 LPRINT TAB(30)"4964 Harvest Rd.,"
470 LPRINT TAB(30)"Colorado Springs,"
480 LPRINT TAB(30)"Colorado 80917"
490 LPRINT TAB(15)"El Paso Cnty"TAB(30)"Tnx QSO / Pls QSL 73"
500 LPRINT TAB(7)"IPA#18022 10-X# 25520 N.E.# 9"
510 LPRINT " "
520 IF K=P THEN GOTO 550

```

If it's CW, it's communications.

832-	ALL MAJOR BRANDS	832-
1111	SALES SERVICE	1111
8-530 Mon.-Fri. 8:30-1 Sat.		

W8BXE Bob K8LQF
John W8ADV

CW

CW ELECTRONIC SALES CO.

800 Lincoln St., Denver, CO 80203

W8BXE Bob K8LQF
John W8ADV

CONTINUED ON PAGE 6

MILEY'S RADIO

Jess KOTAA 719 W. 7th St. Florence, Colorado 81226 784-3040
Hours 8 to 6 Tuesday through Friday — Closed most weekends through the summer
Evening Hours 7 to 9 (Call Ahead)

We'll be closed most weekends this Summer to pursue our favorite hobbies of amateur radio & travel. When there is a swapfest within 700 miles, we will probably be there. We have an answering machine on the phone and will call you back from somewhere as soon as possible if you leave a message & phone number.

We have in stock, or can get within 3 or 4 days — dropped shipped to your door, most any piece of electronic equipment you may want, and at the lowest prices anywhere. We sell most items at the same or lower price as the big mail order houses with no added shipping charges except for a few or very heavy items.

July special, while they last — Santec ST 142 (in our opinion the best HT on the market) - \$275 w/free ST8 desk charger (a \$30 value). Santec ST 142 w/o charger \$269.

Closed for Swapfest in New Mexico June 9, 10, 11 & 12.

See you July 6, 7, 8 & 9 at the Woodland Park Campout & Swapfest. We'll really have some bargains there!!

July 26-30 — Glenwood Springs or Flagstaff, AZ swapfest — or maybe both!

"QSLCARD.BAS" PROGRAM CONT.

```
530 IF PEEK(-17423)= 50 THEN GOTO 570
540 I=I+1: GOTO 210
550 LPRINT CHR$(11):END
560 END
570 LPRINT CHR$(11):GOTO 540
```

THIS SPACE COULDA BEEN YOURS

6

Membership Application PIKES PEAK RADIO AMATEUR ASSOCIATION

Name _____

Address _____

City _____ State _____ Zip _____

Call _____ License Class _____

Are You An ARRL Member? ☐ Yes ☐ No Telephone _____

Full Member \$12.00 ☐

Family Membership \$15.00 ☐

Additional Names _____ Calls _____

Associate Member \$8.00 ☐ (Outside Teller & El Paso Counties.)



MOTOROLA INC.

**Communications
Group**

LIGHTNING PROTECTION RECOMMENDATIONS

The conditions that make a site desirable for two-way radio are the same as those that make a site an excellent target for lightning. Proper lightning protection can completely prevent equipment damage in all but the most severe strikes and even then keep the equipment damage at a minimum. Lightning protection basically consists of preventing the strike from entering the equipment room and then preventing damage to the equipment from induced voltages and currents on power and control lines to the equipment. The following suggestions will help protect valuable radio facilities.

- Keep the tower grounding resistance as low as possible. The lightning stroke current belongs in the tower structure and grounding system, not on the transmission line.
- Use at least eight-foot long copper clad ground rods. Multiple ground rods are better than one especially in dry climate or sandy-rocky soil areas.
- Bring the transmission line off the tower with the sharpest bend permitted by the manufacturer's specifications and make a solid bond between the tower and transmission line sheath just prior to the bend. The sharp bend acts as a spot impedance to the extremely high strike current. This shunts more of the strike current into the tower ground rather than into the equipment. Use no more or no less than the minimum bend radius wherever the transmission line changes direction and introduce a change of direction at every reasonable opportunity. Then, ground the transmission line sheath at the antenna side of each bend in the transmission line.
- Provide additional grounding to the transmission line sheath wherever possible. Make it a point to ground the transmission line where it is supported on poles and where it enters a building.
- It is wise to take at least part of the transmission line through a length of grounded conduit.
- *Bond all equipment cabinets together to a single point.* Then, ground that point to a grounding rod network using as short and as straight a ground wire as possible. If bends in the ground wire are necessary, make them as large a radius as practical.
- Transmission lines should be brought into the equipment cabinets adjacent to the single point ground connection where a good low impedance bond can be made with the transmission line sheath.

Install a gas tube protector between the equipment cabinet ground and AC-neutral where it enters the equipment cabinet. Install gas tube protectors where the control lines enter the building and at the point of entry into the equipment cabinet. Also, install gas tube protectors wherever control lines enter a building and install additional protectors as close to the remote control console as possible.

- Keep ground wires from gas tube protectors to ground rods or perimeter grounds as straight and short as possible. Avoid sharp bends in ground wires.
- Never bundle a ground wire with any other cabling or wiring. Also, never run a ground wire along any metal wall, along any electrical conduit, or inside a conduit.

Remember, the lower impedance the grounding system is in relation to the equipment being protected, the greater the protection afforded to the equipment. Keep the lightning strike current in the grounding network; not running through the equipment to ground.

RECOMMENDED PROTECTORS

The devices listed below are available from your local Motorola Parts Center. Other devices are available from different manufacturers for special applications and may be used in place of those listed herein. Installation instructions are generally packed with each device. The following listing contains phone line suppressors, ac line surge protectors, coaxial cable in-line lightning arrestors, and coaxial cable ground clamp kits. Refer to the Motorola Buyers Guide for additional information.

PHONE LINE SUPPRESSORS

- TRN6187A** Single Line Suppressor, 3-electrode gas tube protector
- TRN4589A** Dual Line Suppressor, 3-electrode gas tube protector
- RRX4021B** Single Line Suppressor, 3-electrode gas tube protector

AC LINE SURGE PROTECTORS

- TLN4399A** AC Line Surge Protector, 117 V ac line, 7/8" x 14 conduit hole mounting
- TLN5920A** AC Line Surge Protector, 240 V ac line, 7/8" x 14 conduit hole mounting
- RRX4017A** AC Line Surge Protector, 117 V ac, 10 Amp, single phase, screw terminal connector block
- RRX4018A** AC Line Surge Protector, 117 V ac, 10 Amp, single phase, 3-prong plug and receptacle
- RRX4019A** AC Line Surge Protector, 117 V ac, 15 Amp, single phase, 3-prong plug and receptacle
- RRX4020A** AC Line Surge Protector, 220/240 V ac, 30 Amp, single phase

COAXIAL CABLE IN-LINE LIGHTNING ARRESTORS

ST-786 UHF type connector
T-787 "N" type connector

COAXIAL CABLE GROUND CLAMP KITS

ST-788 For 1/2" jacketed heliax and pipe or grounding rod
ST-853 For 7/8" jacketed heliax and pipe or grounding rod
ST-789 For 1/2" unjacketed heliax, includes bushings for better contact without collapsing line
ST-790 For 7/8" unjacketed heliax, includes bushings for better contact without collapsing line

**Centennial ★ ★ RCA
ELECTRONICS**

2324 East Bijou, Colorado Springs, CO 80905
PHONE: (303) 633-4666

**COLUMBIA
ELECTRONIC CABLES**

Weller® Xcelite®

SPRAGUE

**GC
ELECTRONICS**

SIMPSON METERS

Chemtronics Inc.,



SOAR

VIZ

Mfg. Co.

TEST INSTRUMENTS

**TECH
SPRAY**

ARRL

Largest Supply of Electronic Parts
In Southern Colorado

Howard W. Sams

TAB BOOKS

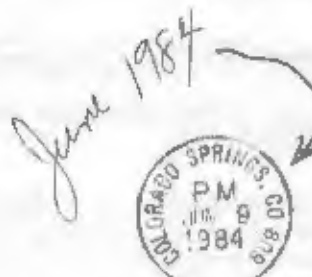


Ø BEAT

**COLORADO SPRINGS,
COLORADO**

Frank Drake KL7IPV

4964 Harvest Lane
Colorado Springs, CO 80917



FIRST CLASS MAIL

GORDON DENNO
WBØTIC
1226 D HASE DR.
HONOLULU HI

96819

NOT DELIVERABLE
AS ADDRESSED
UNABLE TO FORWARD
RETURN TO SENDER

